National Institute of Environmental Health Sciences

Onset of chilblains in relation with weather conditions

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Abstract:

BACKGROUND: Chilblains or perniosis is a moderately severe form of cold injury, localized to peripheral parts of the body, which occurs after exposure to non-freezing temperatures and damp conditions. Although inter-individual variations exist with respect to susceptibility to develop chilblains, no study has been carried out in this region to determine the role of different weather conditions either alone or in combination, in predisposing the susceptible individuals to chilblains. The objective of this study was to determine the relationship between weather conditions and onset of chilblains at a moderately cold weather station. METHODS: This study was conducted at the Department of Dermatology, Combined Military Hospital, Abbottabad, from Dec 2004 to Mar 2005. All patients fulfilling the clinical criteria for diagnosis of chilblains were included in the study. These patients were interviewed and examined thoroughly. A specially designed proforma was filled for each patient separately. Meteorological department was contacted for record of weather conditions. Onset of chilblains in each patient was related with weather conditions of that particular month. Computer programme SPSS 10 was used for statistical analysis. RESULTS: Out of 111 patients, 67 (60.4%) were males and 44 (39.6%) were females. Eighty nine (80.2%), 90 (81.1%) and 90 (81.1%) patients had onset in relation with lower temperature (< 10 degrees C), relatively low atmospheric pressure (< 1500 kpa) and higher relative humidity (> 60%) respectively. There was statistically significant relationship of weather conditions with onset of chilblains when different groups, i.e., elderly and young, males and females, locals and non locals, outdoor workers and those remaining inside most of the time and those having disease of longer or shorter duration were compared. CONCLUSION: The cold weather conditions that can be endured by humans depend on combination of the duration and the extent of the exposure, in addition to physiological adaptive changes. However, susceptibility to chilblains increases when ambient temperature is less than 10 degrees C and relative humidity is more than 60%. Elderly, females, outdoor workers and those having chronic or recurrent episodes of chilblains are less tolerant to cold weather and develop the disease under lesser ambient cold.

Source: http://ayubmed.edu.pk/JAMC/PAST/20-2/Naeem.pdf

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Temperature

Temperature: Extreme Cold, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Pakistan

Health Impact:

specification of health effect or disease related to climate change exposure

Injury, Other Health Impact

Other Health Impact: Chilblains (perniosis)

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children, Elderly, Workers

Other Vulnerable Population: Women

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified